

RUSTANOVICH, D.N.

Mechanism underlying the Ashkhabad earthquake of 1948:
according to geophysical data. Dokl. AN SSSR 153 no.1:86-
89 N '63. (MIRA 17:1)

1. Institut fiziki zemli im. O.Yu. Shmidta AN SSSR. Pred-
stavleno akademikom D.I. Shcherbakovym.

L 11547-66 EWT(d)/EWP(k)/EWP(1)

SOURCE CODE: UR/0105/65/000/001/0091/0092

ACC NR: AP6005029

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Kyazimzade, Z. I.; Mamikonyants, L. G.; Petrov, I. I.; Rustamzade, P. B.;
Spirin, A. A.; Syromyatnikov, I. A.; Esibyan, M. A.; Efendizade, A. A.

ORG: none

TITLE: Professor Boris Maksimovich Plyushch

SOURCE: Elektrichestvo, no. 1, 1965, 91-92

TOPIC TAGS: electric engineering, electric engineering personnel, petroleum
engineering personnel, petroleum engineering

ABSTRACT: Brief biography of subject, a doctor of technical sciences and head of
Department of Electric Power and Automation in Industry at the Azineftekhim
(Azerbaijdzhan Petrochemical Institute), on the occasion of his 60th birthday in
October 1964. Graduating from Azerbaijdzhan Polytechnical Institute imeni
Azizbekov, subject worked in Caspian shipping industry and later headed the designing
division at the Azerbaijdzhan department of Elektroprom. With Azineftekhim since
1927, starting as laboratory assistant; department head since its formation in
1938; deputy dean of power engineering division in 1943-45. One of top Soviet
experts on the electric power supply and electrical equipment of the petroleum
industry, he has trained many engineers and scientists for this field and is the
author of over 60 published works and inventions. Widely known are his works on

UDC: 621.313.1/3

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ACC NR: AP6005029

determining power losses in drilling. He was the first to investigate the problem of selecting the most suitable power characteristics with due consideration for wave-like torque distribution along the drilling string. He did research on the automatic regulation of drill feed, critical roller-bit speeds, self-starting electrical pumps, etc. A party member since 1945, subject has been awarded the Order of the Red Banner of Labor. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09, 13 / SUBM DATE: none

HW

Card 2/2

L 45616-66

ACC NR: AP6033983

SOURCE CODE: UR/0020/66/168/005/1132/1134

AUTHOR: Koridalin, Ye. A.; Medvedev, S. V.; Rustanovich, D. N.; Tokmakov, V. A.;
Khadzhiyevskiy, D.

ORG: Institute of Physics of the Earth, im. O. Yu. Schmidt, AN SSSR (Institut fiziki
Zemli AN SSSR); Skopljje University Seismic Station, Skopljje

TITLE: Seismic conditions around Skopljje after the earthquake of 26 July 1963 on
the basis of instrumental observations

SOURCE: AN SSSR. Doklady, v. 168, no. 5, 1966, 1132-1134

TOPIC TAGS: earthquake, tectonics, seismology/Skopljje

ABSTRACT: In 1964-1965 Soviet and Yugoslav seismologists carried out instrumental
seismic investigations in the neighborhood of Skopljje, in Yugoslavia, site
of a disastrous earthquake on 26 July 1963. VEGIK Soviet seismic stations
with a magnification of 20,000 were used at five stations surrounding the
epicentral zone and it was possible to determine epicenters and focal depths
with high accuracy. During the year about 200 epicenters were determined
(a map accompanies the text); the energy class of the recorded earthquakes
was in the range $4 \leq K \leq 10$ ($K = \log E$ (E in J)). It was determined that
the weak recorded earthquakes are the aftershocks of the main earthquake.
Seismic activity still is high but will continue to abate. The main earth-

UDC: 550.34

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RUSTANOVICH, D.N.; SHIROKOVA, Ye.I.

Some results of an investigation of the Ashkhabad earthquake
of 1948. Izv. AN SSSR. Ser. geofiz. no.12:1782-1788 D '64
(MIRA 18:3)

1. Institut fiziki Zemli AN SSSR.

RUSTANOWICZ, E.

Normowanie w kopalni (Standardization in Mines); a book review, p. 142,
(WIADOMOSCI GORNICZE, Vol. 5, No. 5, May 1954, Katowice, Poland)

SO: Monthly List of East Accessions, (EEAL), LC, Vol. 4, No. 5, May
1955, Uncl.

RUSTANOWICZ, E.

Higher quality of coal. p. 182. (WIADOMOSCI GORNICZE, Vol. 5, No. 6, June 1954, Katowice, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

RUSTANOWICZ, E

"Writing books for the Newly Employed", p. 144, (WIADOMOSCI GORNICZE, Vol. 5, No. 5, May 1954, Katowice, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5, May 1955, Uncl.

RUSTANOWICZ, E.

A book for metallurgists. p. 183. (WIADOMOSCI HUTNICZE, Vol. 10, No. 6, June 1954, Stalinogrod, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

RUSTANOWICZ, E.

"From the treasury of the Soviet science of mining", p. 309 (Wiadomosci Gornicze.
Vol. 4, no. 11, Nov. 1953, Katowice)

Vol. 3, No. 3

SO: Monthly List of East European Accessions. /Library of Congress, March 1954, Uncl.

RUSTECKI, J

"Friendship, of which deeds give evidence." p. 157 (Technika Lotnicza, Vol. 8, No. 6,
Nov./Dec., 1953, Warszawa)

30: Monthly List of East European Accessions, Library of Congress, Vol. 3, No. 6,
June, 1954, Uncl.

RUSTECKI, J.

At the threshold of 1955, p. 1, (MOTORYZACJA, Warszawa, Vol. 10, no. 1, Jan. 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, Jun. 1955,
Uncl.

RUSTECKI, J.

Road and bridge building at the threshold of the 5-year plan. p. 1.
DROGOWNICTWO. (Instytut Techniki Budowlanej) Warszawa. Vol. 11. No. 1,
Jan. 1956.

SOURCE:- East European Accessions List (EEAL), Library of Congress.
Vol. 5, No. 7, July 1956.

RUSTEM, S.L.; GARASHCHENKO, A.P.

[Heat-treatment shop equipment] Oborudovanie termicheskikh tsakhov. Moskva,
Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1953. 254 p. (MLBA 6:10)
(Metals--Heat treatment)

RUSTEM, Semen Leopol'dovich

RUSTEM, Semen Leopol'dovich; GARASHCHENKO, Aleksandr Petrovich;
CHEBURKOV, A.K., inzh., retsenzent; GLIKIN, N.M., inzh., red.;
SHEMSHURINA, Ye.A., red.izdatel'stva; EL'KIND, V.D., tekhn.red.

[Equipment, automatization and mechanization in plants for heat
treatment of metals] Oborudovanie, avtomatizatsiia i mekhanizatsiia
v termicheskikh tsekhakh. Izd.2-oe, perer.i dop. Moskva, Gos.
nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 391 p. (MIRA 11:1)
(Metals--Heat treatment)

RUSTEM, S.I.

PHASE I BOOK EXPLOITATION

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Sokolov, Konstantin Nikandrovich
Oborudovaniye termicheskikh tsekhov (Equipment of Heat-treatment Shops)
Moscow, Mashgiz, 1957. 420 p. 10,000 copies printed.

Reviewers: Shmykov, A.A., Doctor of Technical Sciences, Rustem, S.I., Candidate
of Technical Sciences, Samoshin, I.G., Candidate of Technical Sciences, and
Arzamasov, B.N., Candidate of Technical Sciences; Ed.: Lapkin, N.I.,
Candidate of Technical Sciences; Tech. Ed.: Dugina, N.A.; Executive Ed.
(Ural-Siberian Division, Mashgiz): Kaletina, A.V., Engineer.

PURPOSE: This book is intended primarily for students of higher technical
institutes, but may also be useful to engineers and technicians whose work
involves the heat treatment of metals.

COVERAGE: The book describes basic equipment for heat-treatment shops. Con-
siderable attention is given to the design of modern heat-treating furnaces,

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Equipment of Heat-treatment Shops

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heating devices, cooling installations, as well as procedures for making design calculations. The author also discusses auxiliary equipment used for producing protective atmospheres, for removing scale from machine parts, for straightening, quality control of parts, and automatic temperature regulation. Methods of determining heating and cooling time for heat-treating processes are also considered. The general bibliography contains 166 references, of which 150 are Soviet, 6 are English, and 2 German. For additional references, see Table of Contents. No personalities are mentioned.

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Rustem, S.L.

AUTHOR: Rustem, S.L.

129-4-12/12

TITLE: All-Union Conference on industrial use of high frequency currents held in Leningrad. (Vsesoyuznoye soveshchaniye po promyshlennomu primeneniyu t.v.ch. v g. Leningrade).

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, No.4, pp. 61-64 (USSR).

ABSTRACT: The conference held in November, 1957 was convened by the Leningrad Scientific and Technical Society of the Engineering and Power Generation Industry (Leningradskoye Nauchno-Tekhnicheskoye Obshchestvo Mashinostroitel'noy i Energeticheskoy Promyshlennosti). The task of the conference was to report on advanced experience, to discuss achievements in this field outside the Soviet Union and to evolve recommendations for expanding the use of high frequency in industry and introduction of progressive technology and also evolving organisational measures for improving the quality of high frequency equipment and apparatus. The conference included sections for induction heating technology, metals technology, non-conducting materials and equipment.

Candidate of Technical Sciences, M.A. Spitsyn (NII TVCh imeni V. P. Vologdin) read the paper "New developments Card 1/14 in the field of industrial application of high frequency

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currents". In this paper he outlined the most important trends in the use of high frequency heating between 1955 and 1957 dealing with surface hardening of components with complicated configurations; high speed gas carburisation using induction heating; heating right through of blanks for forging, stamping and rolling; development of apparatus for controlling heat treatment processes and automation and mechanisation in large batch and mass production. During the last three years the following technological processes have been developed which are based on induction heating:

1. Two-frequency "hardening" of the surface of toothed gears with average moduli. First, heating is effected with a frequency of 1000-2500 c.p.s. during which the heat is generated mainly at the bottom of the tooth gap and, following that, radio frequency is fed to the inductor for a duration of 0.5 to 0.8 sec for heating the tips of the teeth. Subsequent quenching permits obtaining a hardened layer which reproduces the shape of the teeth.

2. Gas case hardening of toothed gears using induction heating ensures a sharp increase of the speed of the

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chemical-heat treatment and is used successfully in the automobile industry.

3. Hardening of the drilling bits for use in the oil industry.

4. "Bright" annealing of steel strip.

5. Two-frequency heating of steel blanks for heating by applying pressure, particularly for rolling.

6. Heating and hardening of leaf springs on automatic machines.

7. High speed tempering of hardened components using high frequency heating etc. For automating technological processes, the following are at present manufactured:

An automatic machine for heating and hardening of leaf springs; manipulator for horizontal forging machines; automatic machines for hardening of small components.

Of the new apparatus used in induction heating, the author mentioned a stabiliser of the temperature of components being heated, a photo-electric pyrometer with a direct reading off of the temperature, relay for dosing the energy, etc. Of particular interest were the data he gave on

Card 3/14 the two-frequency heating of gears. The entire process

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takes only a few seconds and can be used in mass production for heat treatment of gears with average moduli. Heating of blanks which are to be shaped by applying pressure is also effected by two-frequency induction heating using 50 c.p.s. current for heating to 700-750°C followed by heating with high frequencies to 1100-1150°C. The two-frequency induction heating reduces the consumption of electricity in the case of heating right through of blanks. For tempering and annealing of weld joints, induction heating with 50 c.p.s. and with higher frequencies is used. The paper of M. G. Lozinskiy, Doctor of Technical Sciences, Institute of Engineering Technology, Ac.Sc. USSR (Institut Mashinovedeniya AN SSSR) dealt with the problems of strength of surface hardened components and the features of high frequency heating. The deformation detected by the author in engineering magnetic steels "45" and "40X" forms in the surface layer as a result of magnetostriction caused by the a.c. electromagnetic field of the inductor. On a smooth surface of blanks consisting of magnetic steels which were subjected to

Card 4/14 repeated cycles of heating and cooling, "mounds" and

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"valleys" form at spacings equalling the half-wave of the supersonic oscillations generated by the high frequency. In non-magnetic steels no such phenomenon was observed. It was also observed that with increasing number of cycles, heating-cooling, the diameter of the cylindrical specimens in the heating zone increases, whilst the height of the specimens decreases. Furthermore, the author reported on the method of G. V. Uzhik which enables increasing the static strength up to 300%; this is achieved by using h.f. heating of a thin layer in the zone of stress concentrations at the surface of steel components. Thus, for instance, cylindrical specimens made of hardened 40X steels with a stress concentrator in the form of a notch will be 2.5 times stronger if the notch zone is tempered by using h.f. heating. M. G. Lozinskiy considers that use of the method of strengthening applying h.f. tempering of the stress concentration zones will permit evolving specifications which would justify more rational designs than those used hitherto.

Card 5/14 K. Z. Shepelyakovskiy (ZIL) read the paper "On reducing the hardenability as a means of achieving contour (surface)

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hardening of toothed gears of average moduli". For this purpose a steel with low hardenability, $\Sigma\text{M} 937$, was used. Gears made of this steel, of 180 mm dia. with a modulus of 4.2, were heated by means of an 8000 c.p.s. current of 100 kW capacity for a duration of 24 secs. The heating was effected in a ring-shaped inductor after which the gears were moved into a ring-shaped shower with a fixed direction of the holes. The teeth and the rims of the gears were subjected to hardening. The strength of the hardened teeth was investigated by loading until failure. In the case of gears made of the steel $30XCT$ (after carburisation and hardening) this load was 15.6 tons, for the steel $\Sigma\text{M} 937$ the load was 16 tons. In the case of hardening of gears made of the steel $\Sigma\text{M} 937$, a minimum deformation occurs, the fluctuations along the pitch circle after hardening amounted to 0.01-0.02 mm. In some cases the contact strength should be increased by increasing the carbon content to 0.6-0.7%.

I. L. Glukhanov, V. N. Bogdanov, Ye. D. Makarova,
H.F. Scientific Research Institute imeni V.P. Vologdin

Card 6/14 (NII TVCh imeni V. P. Vologdina) presented a paper on

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surface hardening of gears by induction heating with two frequencies. The method ensures heating along the contour of gears with moduli of 3.5 to 5. During heating with a lower frequency (1000 to 2000 c.p.s.), the bottom of the tooth gap is heated intensively, whilst at radio frequency (300 000 c.p.s.) the tip of the tooth is heated. The same inductor is used for both frequencies. The heating with the lower frequency lasts 2.5 to 4 secs; thereby, the specific power consumption is 1.5 to 1.7 kW/cm². Heating with the higher frequency is effected for 0.5 to 0.7 sec using a specific power of 1.1 to 1.2 kW/cm². The 1000 c.p.s. current is generated by a 500 kW rotary generator, whilst the 300 kc/sec current is generated with an oscillator circuit of 400 kW rating. During hardening of gears made of steel "45" cracks occur and, therefore, the carbon content was reduced and alloy steels 36Г2С, 35Г etc. are being used. For fracturing a tool of a surface hardened gear a force of 9.5 to 17 tons is required, whilst the force required for fracturing case hardened gears after hardening, made of the steel 18ХГТ,

Card 7/14 did not exceed 10 tons per tooth. Gears produced by using

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two-frequency hardening wore down three times faster than gears produced according to the old technology. Therefore, in the further tests the steels 65Г, 50ХГ, 40ХН and 40ХНМА were used.

The paper of N. M. Rodigin, Ural Branch of the Ac.Sc. USSR (Ural'skiy Filial AN SSSR) was devoted to the new method of induction heating of steel strip. The novel feature consists in the fact that the electro-magnetic field produced by an alternating current is directed perpendicular to its surface and not in the longitudinal direction of the strip. This enables using economical sources of current of elevated frequency, namely, rotary generators. The required temperature distribution along the width of the strip is ensured by an appropriate configuration of the magnetic path and by an air gap between the poles. This method can be used for annealing cold rolled strip, for heating and for preheating of strip during rolling, pickling, deposition of coatings, etc.

V. N. Bogdanov and V. A. Peysakhovich reported on the practical application of the above method for annealing Card 8/14 thin strip in the Leningrad Steel Rolling Mill (Leningradskiy

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Staleprokatnyi Zavod). The optimum frequency depends on the thickness and the width of the strip. For a thickness of 0.2 to 0.6 mm and a width of 100 mm it is recommended to use a current of 8000 c.p.s.; for strip of 200 mm a current of 2500 c.p.s. and for a width of 400 mm a current of 1000 c.p.s. On heating strip to 700-900°C, the uniformity of the temperature along the breadth of the strip is $\pm 25^{\circ}\text{C}$. For heating, a two-turn inductor was used, whereby the conductors of the current and of the magnetic flux were water cooled. This method was applied in the case of bright annealing of cold rolled strip. For a speed of movement of the strip of 25 m/min the required power was 200 kW (for a frequency of 2500 c.p.s.). The productivity of the equipment equalled 1 ton/hr. The specific power consumption during induction heating is 180-190 kWh/ton. Compared with annealing in chamber furnaces, this method has a number of advantages since thereby the productivity per m^2 of production space is increased two to threefold, the annealing time is reduced by several hundred times, uniform mechanical properties are ensured along the entire length of the

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strip coil and welding together of the strip during annealing is prevented. The specific consumption of electricity is higher for induction heating than for electrical furnaces.

V. N. Gridnev, Doctor of Technical Sciences, Kiyev Polytechnical Institute (*Kiyevskiy Politekhnicheskiy Institut*) dealt with the influence of the speed of heating on the structure and the properties of steel. Apparatus was built for the investigations which enabled simultaneous recording of several physical parameters so that the following could be oscillographically recorded: temperature, change in the length of the specimen and in its electric resistance and also current intensity in the inductor. The recording was effected with a speed of 50 to 10 000 °C/sec and the dilatometric curves were recorded with a speed of 60 000 °C/sec. The following binary alloys were investigated - Fe-Cr (up to 8%); Fe-Si (up to 3%); Fe-Ti; Fe-W; the C content was about 0.02%. Steels containing 0.1; 0.45; 0.54; 0.77 and 1.12% C were also investigated. The author has established that during heating of annealed carbon-free alloys, the

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transformation temperature does not depend on the speed of heating and the magnitude of the volume effects depends on the composition of the alloy and the preceding heat treatment. When heating annealed iron-carbon alloys, the transformation temperature is determined by the speed of heating and by the initial structure. On heating hardened low alloy carbon-free alloys, the transformation temperature compared to that in the alloys in the annealed state does not change at all in some cases (Fe-Si; Fe-Ti), whilst in other cases it decreases by 30 to 40°C (Fe-Cr and Fe-W). On heating hardened steels, the dilatometric recordings show clearly the volume changes caused by the martensite decomposition and by the phase transformation; the decomposition cannot be suppressed not even at heating speeds of 60 000°C/sec. At high heating speeds of hardened steels, the phase transformation takes place in the range of 700°C, i.e. at lower temperatures than the transformation during slow heating. Investigations of the influence of the heating speed on the structure and properties of hardened, carbon and alloy steels in the case of electric tempering showed that at elevated

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heating speeds a favourable combination can be obtained of the strength and ductility and also an increased resistance to wear which is of practical interest. In their paper I. N. Kidin, Doctor of Technical Sciences, and Yu. A. Bashnin, Moscow Institute of Steel (Moskovskiy Institut Stali) expressed the view that the higher the heating speed the larger will be the temperature range in which phase transformations will take place. Experimental data show that pearlite-austenite transformations proceed in the range of higher temperatures. In the case of high frequency hardening, higher temperatures are required than in the case of heating in an ordinary furnace. This is attributed to the fact that the phase transformations proceed with a higher speed due to the more rapid rise in the temperature and due to the sharp acceleration of the dissociation of carbides and the diffusion of carbon in the ferrite. The authors showed that it is justified to introduce a new thermal parameter, namely, the speed of induction heating in the range of phase transformations. This would enable the plotting of diagrams of preferential and permissible

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hardening regimes which would conserve the character of generally valid relations under conditions which are reproduceable in normal production.

V. P. Pleshachkova (TsNIITMASH) read an interesting paper on the deformation of surface hardened steel. H.F. surface hardening permits reducing the deformation of the steel. The author investigated the influence on the deformation of the following factors: heating temperature, cooling speed, depth of the hardened layer, structure of the starting material and also of the temperature and time of heating in the case of low temperature tempering. The results have shown that in the case of h.f. surface hardening of ring specimens with small height to diameter ratios (1:4; 1:7) produced from various steels, the deformation manifests itself in a decrease of the outside diameter and an increase in the height and in the inner diameter. An increase in the temperature leads to an increase in the deformation along the outside and inside diameters and manifests itself less on the height of the rings. The deformation of rings made of alloy steels

Card 13/14 is greater than for rings made of carbon steels under

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equal conditions of heating and cooling. Cooling in a 30 to 35% solution of glycerine and a 5% solution of potassium permanganate brings about a reduction in the deformation and in the crack formation, particularly in the case of alloy steels (40X, 40XH). Tempering at 140 to 200°C reduces the dimensions as compared to the hardened state and thereby the changes in the dimensions of the height and the internal diameter are compensated but the changes of the external diameter are amplified. Increase of the tempering temperature brings about an increase of the deformation.

Representatives from Roumania and East Germany participated in the Conference. The German delegate, E. Trippmacher, reported on the designs of compact h.f. transformers with built-in magnetic paths produced in East Germany.

NOTE: This is a complete translation and not an abstract.

AVAILABLE: Library of Congress.

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129-58-7-1/17
AUTHORS: Gulyayev, A. P., Doctor of Technical Sciences, Professor,
Rustem, S. L., Candidate of Technical Sciences and
Orekhov, G. N. and Alekseyeva, G. P., Engineers
TITLE: Investigation of New Die Making Steels for Hot Stamping
of High Temperature Alloys (Issledovaniye novykh
shtampovykh staley dlya goryachey shtampovki zharoprochnykh
splavov)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 7,
pp 2-10 + 2 plates (USSR)

ABSTRACT: This study has been awarded a prize at the imeni D.K.Chernov
NTO Mashprom competition for the best research work
carried out in 1955-1957. For hot stamping the Soviet
steels 5KhNM and 5 KhGM were used in the past and were
subsequently substituted by various steels not containing
molybdenum, which is a scarce material in the Soviet Union.
In the introduction the authors summarise the effects of
the individual elements thus: tungsten ensures red hardness
up to 620°C and improves the wear resistance. A tungsten
content exceeding 10% will not bring any further improve-
ment in the properties. On the other hand, it affects
adversely the resistance of the materials to temperature

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changes, it brings about an increase in the quantity of ferrite at the hardening temperature and a tendency to form grinding cracks. 2. Molybdenum is twice as effective as tungsten. For an equal hardness, molybdenum steel will have better physical properties than tungsten steel. Molybdenum improves the hardenability, increases the resistance to scoring, improves the hardness. However, it reduces the hardening temperature range, it causes surface decarburisation and makes the steel susceptible to grain growth. 3. Chromium reduces the tendency of the steel to oxidise, improves the hardenability and ensures red hardness up to 425°C. However, longer heating is necessary for dissolving the carbides. 4. Vanadium reduces the grain size. 5. Silicon influences the character of the scale forming in air; instead of a dense film an easily removeable powdery oxide is obtained. Furthermore, it increases the wear resistance. Of great importance is carbon which increases the strength, the wear resistance and the hardenability. However, an increased carbon content brings about increased brittleness and scoring

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cracks. Die-making steel contains 0.25 to 0.60% C. Fifteen new grades of die-making steels were developed and investigated. For comparing the properties of these steels the Soviet steel 3Kh2V8 has also been investigated and the respective values are used as reference values. The chemical compositions of the investigated steels are entered in Table 1, p.3. A technique has been developed for testing die-making steels. The obtained results are described in great detail; they are also entered in tables and plotted in graphs. In Fig.1, p.4 the influence of the hardening temperature on the hardness of some experimental steels is graphed. Figs.2-5 (plate) show the micro-structure of some of the investigated steels after various heat treatment regimes. In Fig.6 the dependence is graphed of the hardness of some of the experimental steels on the tempering temperature. Fig.7 shows the hardenability of the experimental steels. Fig.8 shows the dependence of the strength of the experimental steels on the test temperature. Fig.9 shows the dependence of the yield point of the investigated

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steels on the temperature. Fig.10 shows the dependence of the relative elongation of the investigated steels on the temperature. Fig.11 shows the dependence of the relative contraction of these steels on the temperature. Fig.12 shows the dependence of the impact strength of the investigated steels on the temperature. Fig.13 shows the hot hardness of the experimental steels. Fig.14 indicates the resistance to temperature changes of the individual experimental steels. Table 2 gives the hardness of the investigated steels after hardening and tempering from various temperatures. Table 3 gives the hardness of the experimental steels after heating to the hardening temperature and cooling under various conditions. The main data on the mechanical properties and chemical compositions of the experimental steels are summarised in Table 5. The most important properties of these steels from the point of view of manufacturing dies were determined. Furthermore, four steels for manufacturing dies to be used for stamping high temperature steels are proposed, the chemical analyses of which

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are entered in Table 6, p.10. The authors advocate testing these steels under shop conditions. There are 14 figures, 6 tables and 7 references, 1 of which is Soviet, 1 German and 5 English.

ASSOCIATION: Moskovskiy vecherniy mashinostroitel'nyy institut
(Moscow Evening Mechanical Engineering Institute)

Card 5/5

RUSTEM, Semen Leopoldovich, kand.tekhn.nauk; GARASHCHENKO, Aleksandr Petrovich [Garashchenko, O.P.], kand.tekhn.nauk; CHEBURKOV, A.K., inzh. retsenzent; GLIKIN, N.M. [Glikin, N.M.], inzh., red.; SOROKA, M.S., red.

[Equipment, automation, and mechanization in heat-treating departments] Obladnaniia, avtomatizatsiia i mekhanizatsiia v termichnykh tsakhakh. Moskva, Derzh.naukovo-tekhn. vyd-vo mas ynobudivnoi lit-ry, 1959. 371 p.

(MIRA 14:5)

(Automation) (Metals--Heat treatment)

18-1111

24566

S/137/61/000/005/051/060
A006/A106

AUTHORS: Gulyayev, A. P.; Rustem, S. L.; Orekhov, G. N., and Alekseyeva, G. P.

TITLE: New steels for hot press forging of heat resistant alloys

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 5, 1961, 16, abstract 5I110 (V sb.: "Metallovedeniye i term. obrabotka metallov" [Tr. Sektsii metalloved. i term. obrabotki metallov. Tsentr. pravl. Nauchno-tekhn. o-va mashinostroit. prom-sti. no. 2] Moscow 1960, 179-196)

TEXT: The authors carried out comparative investigations of the properties (hardenability, roasting ability, heat resistance, maximum heat resistance, adhesion resistance, mechanical properties at room and higher temperatures, hardness in hot state) of 15 compositions 3X288 (3Kh2V8) Cr-base die steel. These compositions are characterized by 1) higher C content at normal W content; 2) higher W content; 3) lower W content at higher Cr, V, and Ti or Cr and Si amount; 4) admixture of Mo, Co or Ni, 5) Mo instead of W and alloying with Mo, W and Ni. It was established that steels whose compositions are given in the table below, showed optimum properties. Grade 4Kh3V8M and 4KhV2M2F steels were

Card 1/2

New steels for hot press forging ... 24566

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A006/A106

subjected to industrial tests and are recommended for the production of dies for the hot deformation of heat resistant parts.

Table:

Steel Grade	Alloying elements, %					
	C	Si	Cr	V	W	Mo
4X6B6C (4Kh6V6S)	0.35-0.45	1.2-1.4	6-7	0.5-0.6	6-7	-
4X3B8M (4Kh3V8M)	0.35-0.45	0.3-0.4	3.0-3.5	0.4-0.6	8-9	1.0-1.2
4X3B2M2Φ (4Kh3V2M2F)	0.35-0.45	0.3-0.4	3.0-3.5	1.5-2.0	2.0-2.5	2.0-2.5
4X3M6BΦ (4Kh3M6VF)	0.35-0.45	0.3-0.4	3.0-3.5	0.5-0.7	1.0-1.5	5.5-6.0

There are 14 references.

T. F.

[Abstracter's note: Complete translation]

Card 2/2

S/129/61/000/004/011/012
E073/E535

AUTHOR: Rustem, S. L., Candidate of Technical Sciences,
Scientific Secretary

TITLE: Results of All Union Competitions in 1960 for the imeni
D. K. Chernov and N. A. Minkevich Prizes

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
1961, No.4, pp.60-62

TEXT: D. K. Chernov Prizes:

Doctor of Technical Sciences Professor A. P. Gulyayev
was awarded the first prize for his book "Heat treatment of steel",
Mashgiz, 1960. Second prizes were awarded to Candidate of Technical
Sciences M. L. Bernshteyn for his work "Thermomechanical-magnetic
treatment of metals and alloys" (Metallovedeniye i termicheskaya
obrabotka metallov, No.10, 1960); Candidate of Technical Sciences
B. A. Movchan for the paper "Origin of the structure and some
properties of crystal boundaries in cast metals and alloys"
(Izv.AN SSSR, OTN, Metallurgiya i toplivo); Doctor of Technical
Sciences M. V. Pridantsev and G. V. Estulin for the paper "Effect
of alloying elements with low solubility in the solid nickel-

Card 1/4

S/129/61/000/004/011/012

E073/E535

Results of All Union Competitions...

chromium solution on the properties of refractory, nickel-base alloys" (Stal', Nos. 9 and 10, 1960).

Third prizes were awarded to:

1. A. A. Gorshkov, M. V. Voloshchenko, K. K. Prozhog, I. K. Udovikov, A. I. Toropov for the work "Improvement of the physical-mechanical properties of high strength spheroidal iron for the production of crankshafts".

2. M. G. Taubina, Ye. M. Pivnik, N. Ya. Karasik and N. Ye. Shlepyanova for the work "Investigation of the structural transformations in the steel ЭИ572 (EI572) under conditions of long duration thermal soaking" (20 000 hours at 600°C and 30 000 hours at 650°C, respectively). ✓

Consolation prizes were awarded to:

Engineer L. B. Getsov for his paper "Behaviour of refractory materials under cyclic heating and loading" (Teploenergetika, No. 9, 1960 and Izv. AN SSSR OTN, No. 6, 1960); Candidate of Technical Sciences L. Ya. Liberman and Engineer M. N. Sokolov for the work "Investigation of high temperature characteristics of bolt steels".

Card 2/4

Results of All Union Competitions... S/129/61/000/004/011/012
EO73/E535

for the work "Low temperature stress removal in certain welded structures".

Consolation Prizes:

1. V. D. Buyadzhi and D. S. Gil'gur for the paper "Automatic machine for zonal high frequency hardening of thin discs". ✓
2. L. V. Torgonskiy and G. S. Cherkovskiy for the work "Equipment for cooling steel strip after tempering on a thermal unit".
3. V. F. Loshkarev, V. I. Mashkov, A. I. Malyarenko, N. F. Vlasov, B. I. Golovko "Internal cracks in forgings of the alloy EI481" (EI481)".

ASSOCIATION: Sektsiya metallovedeniya (Metals Section).
TsP NTO MASHPROM

Card 4/4

RUSTEM, S.L., kand. tekhn. nauk; LAKHTIN, Yu.M., doktor tekhn. nauk,
prof.; GLIKIN, N.M., dots., red.; IVANOV, N.A., red. izd-va;
SOKOLOVA, T.F., tekhn. red.

[Equipment and design of heat-treating plants] Oborudovanie i
proektirovanie termicheskikh tsekhov. Moskva, Mashgiz, 1962.
588 p. (MIRA 15:7)

(Furnaces, Heat-treating)
(Metals—Heat treatment)

RUSTEM, S.L., kand.tekhn.nauk; NIKITIN, V.N., inzh.; BYSTRIKOV, A.P.

Heat treatment of low-module gear wheels by heating with high frequency currents on self-tempering. Metalloved. i term. obr. met. no.3:34-38 Mr '62. (MIRA 15:2)

1. Moskovskiy vecherniy mashinostroitel'nyy institut.
(Gearing)
(Induction hardening)

RUSTEM, S.L., kand.tekhn.nauk

Results of the 1961 All-Union Competition for the D.K.
Chernov's and N.A. Minkevich's Prizes. Metalloved. i term.
obr. met. no.3:63-64,3 of cover Mr '62. (MIRA 15:2)

1. Uchenyy sekretar' seksii metallovedov-termistov Nauchno-
tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti.
(Rewards (Prizes, etc.)
(Bibliography—Metals)

S/129/62/000/006/006/008
E111/E435

AUTHORS: Rustem, S.L., Candidate of Technical Sciences,
Eyfir, Ye.M., Engineer, Braslavskiy, D.I., Engineer

TITLE: Stamping steels for hot stamping of parts from heat-
resisting alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
no.6, 1962, 44-48

TEXT: The steels studied were type 4X362M2Ф (ЭП1)
[4Kh3V2M2F (EP1)], 4X388M (ЭП2) [4Kh3V8M (EP2)],
4X666C (ЭП3) [4Kh6V6S (EP3)]. Laboratory work included the
determination of optimum heat treatment conditions. Mechanical
properties were studied at room temperature and at 500, 600 and
650°C. Types ЭП1437Б (EI437B) and ЭП617 (EI 617) were stamped at
1150 to 950°C on a mechanical forging press. The durability of
the test steels was compared with that of type 5XНВ (5KhNV) and
5X2В8 (5Kh2V8) steels. Type EP1 and EP2 are recommended and were
found to be more economical than 5KhNV and 3Kh2V8. Heating to
400 - 500°C is needed before use. The heat treatment recommended
is air or oil quenching from 1125 ± 15°C; first tempering from
Card 1/2

Stamping steels for hot ...

S/129/62/000/006/006/008
E111/E435

625-650°C - 6 hours; second from 610-635°C - 4 hours.
Doctor of Technical Sciences, Professor A.P.Gulyayev directed
this work. There are 5 tables.

ASSOCIATION: Moskovskiy vecherniy mashinostroitel'nyy institut
(Moscow Evening Machinery Institute)

✓

Card 2/2

ACCESSION NR: AP4022899

S/0148/64/000/003/0161/0168

AUTHORS: Rustom, S. L.; Vasil'yev, Ye. N.

TITLE: Nitriding austenite stainless steel 25Kh18N8V2

SOURCE: IVUZ. Chernaya metallurgiya, no. 3, 1964, 161-168

TOPIC TAGS: steel, stainless steel 25Kh18N8V2, steel nitriding, nitrided layer hardness, nitrided layer depth, corrosion resistance, nitriding temperature, nitriding time, ammonia dissociation

ABSTRACT: The properties of nitrided stainless steel 25Kh18N8V2 (used in machine parts production) have been investigated. Its composition (in %) is: C--0.23, Cr--17.04, N--7.97, Mn--0.35, W--2.15. Samples 10 mm in diameter and 20 mm long were annealed for two hours at 820C + 10, air cooled, and ground to surface smoothness of v8 - v9. After degreasing and reducing of the oxide film with ammonium chloride, the samples were suspended in a stainless steel container within a furnace. Ammonia was next blown into the container, and the samples were heated to 530, 550, 560, 570, 580, and 600C. They were nitrided for 20 hours and were

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ACCESSION NR: AP4022899

air cooled to 100-150C. At this point the flow of ammonia was stopped and the samples removed. The depth of the nitrided layer, the hardness, and the micro-structure of metal were then studied. It was found that with ammonia dissociation of 25-35% the greatest depth of nitrided layer (0.15 mm) was attained at 600C and the smallest depth (0.09 mm) at 530C. The maximum hardness (1180 HV) was reached at 530C and the minimum (752 HV) at 600C. The temperature of 560C was taken to be optimal for the desired combination of these properties. When the period of nitriding was varied (20, 30, 40, 50, 100, and 145 hours), it was determined that the depth of the nitrided layer increased parabolically with the time of nitriding, reaching its maximum of 0.29 mm in 145 hours. The hardness of metal, however, decreased as the time lengthened (see Fig. 1 on the Enclosure). To establish the relation between the depth of layer and the degree of ammonia dissociation, the latter process was varied (15-25%, 25-35%, 35-45%, and 70-90%). The depth reached its maximum (0.1425 mm) at the dissociation rate of 15-25% and its minimum (0.115 mm) at 70-90%. The most desirable hardness was attained at the dissociation rate of 25-60%. For the best combination of depth and hardness, the dissociation of 25-40% was taken to be optimal. The change of hardness through the depth of nitrided layer was studied on the specimens processed for 30 hours at 560C with

Card 2/63

ACCESSION NR: AP4022899

ammonium dissociation of 23-35%. To determine the influence of nitriding on the corrosion resistance, the samples were nitrided for 20 hours at 560C, with dissociation of 15-25%, 25-35%, 35-45%, and 70-90%. In order to obtain comparative data, similar specimens of steel 30KhGSA were also nitrided. Corrosion produced by exposure to fresh and to sea water was investigated by surface inspection, and the time of exposure necessary to produce the first signs of corrosion was recorded. Steel 25Kh18N8V2 proved to be less resistant than steel 30KhGSA. Samples nitrided for 20 hours at 560C and at the dissociation rate of 25-35% showed no signs of corrosion after being exposed to warm fresh water and to sea water for 11 days. The greatest corrosion effects were noted on steel nitrided at 530, 580, and 600C. Graphs presented in Fig. 2 of the Enclosure give optimal conditions for nitriding machine parts made of steel 25Kh18N8V2. For parts with the nitrided layer 0.10-0.13 mm deep the nitriding should be continued for 20 hours at 560C with ammonia dissociation of 20-40%. For a depth of 0.14-0.20 mm, nitriding should be continued for 40 hours (with other conditions remaining unchanged). Parts so treated have surface hardness of 960 HV and resist corrosion in either cold or warm fresh water and in sea water vapor. Orig. art. has: 6 graphs and 1 table.

ASSOCIATION: Moskovskiy avtomekhanicheskiy institut (Moscow Institute of Auto-mechanics)
Card 3/63

POGODIN--ALEKSEYEV, G.I., doktor tekhn. nauk, prof., otv. red.;
RAKHSHTADT, A.G., kand. tekhn. nauk, dots., nauchn. red.;
SHREYBER, G.K., kand. tekhn. nauk, dots., nauchn. red.;
BERNSHTEYN, M.L., doktor tekhn. nauk, red.; LAKHTIN, Yu.M.,
doktor tekhn. nauk, prof., red.; RUSTEM, S.L., kand. tekhn.
nauk, dots., red.; FEDOTENKO, N.S., inzh., red.

[Study of metals and their heat treatment] Metallovedenie i
termicheskaya obrabotka. Moskva, Mashinostroenie, 1964.
195 p. (MIRA 18:7)

1. Nauchno--tekhnicheskoye obshchestvo mashinostroyitel'noy
promyshlennosti. Sektsiya metallovedeniya i termicheskoy
obrabotki.

POPADIC, Miodrag; RUSTEMBEGOVIC, Fahrudin; NOMIC, Nurudin

Iasix in edematous conditions. Med. arh. 19 no.3:19-23 My-Je '65.

1. IJJ interna klinika Medicinskog fakulteta u Sarajevu (Sei:
Prof. dr. Ibro Brkic).

ILIC-VUKOTIC, N., dr.; RUSTEMBEGOVIC, F., doc. dr.

Anticoagulant and fibrinolytic therapy. Med. arh. 18 no.5:
39-47 S-O'64.

1. III. interna klinika Medicinskog fakulteta u Sarajevu
(Sef: Prof. dr. I. Brkic).

RUSTEMBEGOVIC, F.; JELIC, J.; SAKAMBET, A.

Review of some manifestations of peptic ulcer. Med. arh. 15 no.4:
57-62 J1-Ag '61.

1. Interna klinika Med. fakultata u Sarajevu -- III odjeljenje
(Sef: prof. dr I.Brkić).
(PEPTIC ULCER compl)

BRKIC, I., prof.d-r; RUSTEMBEGOVIC, F., d-r

Post-myocardial infarction syndrome. Med.arh., Sarajevo 14 no.7:
15-21 Ja '61.

1. Interna klinika Medicinskog fakulteta u Sarajevu - III odjeljene
(Sef: prof. d-r I.Brkić)
(MYOCARDIAL INFARCT compl)

MIKES, Andrija, dr.; RUSTEMBEGOVIC, Fahrudin; JANCIC, Milos, mr. ph.

Hanger's and Mac Lagan's reaction in diagnosis of hepatobiliary diseases. Med. pregl., Novi Sad 7 no.5:374-380 1954.

1. I Interna klinika Medicinskog fakulteta, Sarajevo, sef prof. dr. B.Zimonjic Biohemiska laboratorija Medicinskog fakulteta, Sarajevo, sef mr. ph. Milos Jancic.

(LIVER FUNCTION TESTS

cephalin-cholesterol flocculation & turbidity test in hepatobiliary dis.)

(LIVER, dis.

diag., cephalin-cholesterol & thymol turbidity test)

(BILIARY TRACT, dis.

dis., cephalin-cholesterol & thymol turbidity test)

(RUSTEMBEGOVIC, Fahrudin, d-r

Extrarenal syndrome. Med.arh., Sarajevo 14 no.5:101-103 S-O '60.

1. III Interna klinika Medicinskog fakulteta u Sarajevu (Sef: prof
d-r I.Brkić)

(KIDNEY DISEASES)

RUSTEMBEGOVIC, F.; DANILOVIC, S.; NUMIC, N.; CERIMOVIC, S.

Use of hygroton in edematous conditions. Med. arh. 16 no.5:77-81
S-0 '62.

1. Interna klinika Medicinskog fakultata u Sarajevu -- III odjeljenje
(Sef: prof. dr Ibro Brkic).
(EDEMA) (DIURETICS)

BRKIC, I., prof. dr.; RUSTEMBEGOVIC, F., doc., dr.; SURBAT, G., dr.

Systolic murmur above the aortic valve in aortic sclerosis and its diagnostic significance. Med. arh. 16 no.6:37-45 N-D '62.

1. Interna klinika III Medicinskog fakulteta u Sarajevu.

(Self: ~~prof. dr. Ibro Brkic~~)
(AUSCULTATION) (ARTERIOSCLEROSIS) (AORTIC DISEASES)

RUSTEMBEKOV, S.S.; KUPERMAN, F.M.

Development and growth of various morphophysiological types of corn in relation to light. Nauch. dokl. vys. shkoly; biol. nauki no.2:206-214 '61. (MIRA 14:5)

1. Rekomendovana kafedroy darvinizma Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
(CORN (MAIZE)) (PLANTS, EFFECT OF LIGHT ON)

RUSTEMBEKOV, S.S.

Effect of different light conditions on the accumulation of the green matter and chlorophyll content of leaves in corn. Nauch. dokl. vys. shkoly; biol. nauki no.4:132-135 '61. (MIRA 14:11)

1. Rekomendovana kafedroy darvinizma Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
(CORN (MAIZE)) (PLANTS, EFFECT OF LIGHT ON)
(CHLOROPHYLL)

RUSTEMOV
RUSTEMOV, M.

Kazakh S.S.R. Nauka i pered. op. v sel'khoz. 7 no.11:16-17 N '57.
(MLBA 10:11)

1. Direktor pavil'ona "Kazakhskaya SSR" Vsesoyuznoy sel'skokhozyay-
stvennoy vystavki.

(Kazakhstan--Agriculture)

RUSTEMOVA, D.M.

Serological indices of the effectiveness of prevention of suppurative diseases in parturients, puerperants and newborn infants. Zhur.mikrobiol., epid.i immun. 40 no.12:76-79 D '63. (MIRA 17:12)

1. Iz Karagandinskogo meditsinskogo instituta i Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR.

RUSTEYKA, A. M.

" "Draining Building Foundations by Means of Sand Piles." Cand Tech Sci,
Leningrad Polytechnic Inst imeni M. I. Kalinin, Min Higher Education USSR,
Leningrad, 1955. (KL, No 17, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended
at USSR Higher Educational Institutions (16).

RUSTEYKA, V.M. (Kaunas, ul. Tel'shyu, d.26, kv.1)

Osteosynthesis by the heterotransplant in fractures of the
proximal end of the humerus. Ortop., travm.i protez. 23
no.6:62-63 Je '62. (MIRA 15:9)

1. Iz kafedry gosptal'noy khirurgii (zav. - D.S. Klebanov)
Kaunasskogo meditsinskogo instituta.
(HUMERUS—FRACTURE) (BONE GRAFTING)

EXCERPTA MEDICA Sec 17 Vol 5/4 Public Health Apr 59

1298. MASS EXPERIENCE WITH THE PROPHYLAXIS AGAINST SCARLET FEVER, EPIDEMIC PAROTITIS AND VARICELLA - Tapasztalatok kanyaró, mumps és bárányhimlő elleni védelemről nagyobb gyermek-kollektíván - Rusti G. Főzérradványi Megyei Gyermekkórház Közl. - ORV. HETIL. 1958, 99/8-9 (275-276) Tables 1

The author believes in the hypothesis that the viruses of measles, chickenpox and mumps gain entrance to the body through the healthy conjunctiva and thus cause infection. Acting on this hypothesis and working in a 200-bed children's sanatorium, he instilled into each conjunctival sac 1-2 drops of the appropriate fresh convalescent serum in those children who were exposed to one of these diseases. Of 69 exposed to measles, of 118 exposed to mumps and of 58 exposed to both mumps and chickenpox, none developed these diseases within 21 days of the conjunctival instillation, whereas of 109 exposed to chickenpox, only one child developed the disease, the day after the instillation. The author considers that this is an excellent method of stemming a potential epidemic in an institution. (There were no controls.)

Lorber - Sheffield (L, 7, 6, 17)

RUSTI, Gyula, Dr.

Experiences on protection against measles, mumps and chickenpox in larger child communities. Orv. hetil. 99 no.8-9:275-276 23 Feb - 2 Mar 58.

1. A Fuzerradványi Megyei Gyermekkorház (igazgató: Rusti Gyula dr.) közleménye.

(MEASLES, prev. & control

vacc. with convalescent serum in epidemic in children's hosp.
(Hun))

(MUMPS, prev. & control

same)

(CHICKENPOX, prev. & control

same)

RUSTIC, Milosav; DJURIC, Dusan

Etiology and clinical aspects of liver cirrhosis observed at the
First Internal Clinic in Belgrade during 1947-54. Srpski arh.
celok. lek. 84 no.7-8:872-883 July-Aug 56.

1. I Interna klinika Medicinskog fakulteta u Beogradu.

Upravnik: prod. dr. Branislav Stanojevic.

(LIVER CIRRHOSIS, statistics,
hosp. report (Ser))

SABLINSKA, Bożena; DOROCIĄK, Roman; HARUPPA, Jerzy; JENTYS, Wanda; PIATKOWSKI, Zbigniew; RUSTOWSKI, Jerzy

The results of the treatment of cancer of the cervix, uteri during the years 1954 and 1955. Nowotwory 12 no.3:247-250 '62.

1. Z Oddziału Onkologii Ginekologicznej Instytutu Onkologii w Warszawie Kierownik: doc. dr med. L. Tarłowska Dyrektor: prof. dr med. W. Jasinski.

(CERVIX NEOPLASMS)

JENTYS, Wanda; RUSTOWSKI, Jerzy

Results of the treatment of primary vaginal cancer in the Warsaw
Institute of Oncology. Nowotwory 14 no.4:401-404 (-D '64

1. Z Oddzialu Onkologii Ginekologicznej Instytutu Onkologii
w Warszawie (Kierownik: doc. dr. med. L. Tarlowska; Dyrektor:
prof. dr. med. W. Jasinski).

TARLOWSKA, Ludwika; RUSTOWSKI, Jerzy; NOZDRYN-PLOTNICKI, Boguslav

Invasive uterine cervix cancer in the material of the Warsaw
Institute of Oncology in 1950-1957. Ginek. Pol. 36 no.3:
309-314 Mr '65.

1. Z Oddzialu Onkologii Ginekologicznej Instytutu Onkologii w
Warszawie (Kierownik: doc. dr. med. L. Tarlowska).

N/5
633.63
.R6

RUSTBOV, I

Vrediteli Tsitrusovykh i ikh estestvenniye vragi (citrus tree pests and their natural enemies) Moskva, Akademiya Nauk, 1954.

259 P. Illus. (Nauchno-populyarnaya seriya, vypusk 2)

At head of title: Akademiya Nauk, SSSR. Vsesoyuznoye Entomologicheskoye Obshchestvo.

"Literatura"; I. 248-253.

RUSU, A.

RUSU, A. What is new? The Mureseni brick and tile plant. p. 2.

Vol. 6, no. 350, Sept. 1956
CONSTRUCTIBIL
TECHNOLOGY
Rumania

So: East European Accession, Vol. 6, No. 5, May 1957

RUSU, A.

Dilated clay; an aggregate for light concrete. p. 3.
(CONSTRUCTORUL. Vol. 9, no. 379, Apr. 1957, Bucuresti, Rumania)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 12, Dec. 1957.
Uncl.

ABUREL, E., prof.; ZERVOS, G., dr.; RUSU, A., dr.; TITEA, V., dr.;
PANA, S., dr.

Immunobiological and therapeutic research in vaginal trichomoniasis. Microbiologia 8 no.2:145-152 Mr-Apr '63.

1. Lucrare efectuata in Clinica I de obstetrica si ginecologie
"Filantropia" I.M.F., Bucuresti.
(TRICHOMONAS VAGINITIS) (SKIN TESTS)
(SERTHERAPY (VACCINE THERAPY)

SLUZHANSKIY, Kh.; ULMAMEY, P.; RUSU, A.

Relation between grain and cob moisture in storing ear corn in piles.
Biokhim.zerna no.5:206-213 '60. (MIRA 14:5)

1. Nauchno-issledovatel'skiy agronomicheskiy institut, Rumynskaya
Narodnaya Respublika.

(Corn (Maize)--Storage)

RUSU, Adrian

Offensive in the Danube meadowland. Constr Buc 16 no.730:3
4 Ja'64.

HARMOS, Gavril, economist; FUIU, Eugeniu, economist; STELIAN, B., corresp.;
RUSU, Adrian

Obligations in socialist competition become facts. Constr Buc
17 no.79 :1. 17 Ap '65.

RUSU, Adrian

The final coordinated construction plan. Constr Buc 14 no.
673: 3 ; 1 December 1962.

BARA, Nicolae, ing.; AURELIAN, Z.; RUSU, Adrian

Preparations for winter. Constr Buc 16 no.769:2,3
3 Oct '64

1. Head of the Office of Production, "Ceramica" Enterprise
of Construction Materials, Bucharest (for Bara).

RUSU, Adrian

Urgent problems in the construction of the combine of
Wood Complex Industrialization, Sighet. Constr Buc 16
no. 737: I 22 F*64.

RUSU, Andrei; ROZENFELD, I.; NISTOR, Cornel, ing.; MARCHEAN, Ioan, ing.;
GAVRILA, T., ing.

Well-known problems but still insufficiently solved. Constr Buc
15 no.723:3 16 N '63.

1. Director al Trustului Regional de Constructii de Locuinte,
Maramures (for Rusu).
2. Directorul I.I.M.I., Bucuresti (for
Rozenfeld).
3. Director tehnic al D.G.C.M.U.C.R. (for Nistor).
4. Directorul Intreprinderii no.2, Sibiu a Trustului Regional de
Constructii de Locuinte, Brasov (for Marchean).
5. Directorul
I.C.L., Bucuresti (for Gavrilă).

RUSU, A. ; ULMANCI, P. ; SLUSANSCHI, H.

Taking average samples of corncobs for physical analysis. p.70

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Abstract [English summary modified]: Intradermal testing with antigen
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L 8514-65 EWT(1)/T/EEG(b)-2 IJP(c)/AFWL/ESD(t)/RAEM(t)

ACCESSION NR: AP4041216

g/0030/64/006/001/0141/0150

AUTHOR: Rosenberg, M.; Tenasoiu, C.; Rusu, C.

TITLE: Modification of the domain structure of barium-ferrite single crystals under the influence of a magnetic field

SOURCE: Physica status solidi, v. 6, no. 1, 1964, 141-150

TOPIC TAGS: domain structure, barium ferrite single crystal, Bitter pattern, barium ferrite, Bloch wall

ABSTRACT: With a view toward confirming a domain-structure scheme previously proposed by two of the authors for the basal plane (see Fig. 1 of the Enclosure), this paper presents some results of the investigation of Bitter-pattern modifications in barium-ferrite single crystals in an external magnetic field. Since in single crystals more than several μm thick, the domain patterns are much more complicated than in thin specimens, the authors limit themselves to qualitative considerations. The samples were prepared by the flame-fusion method and cut parallel to the cleavage planes perpendicular to the hexagonal axis; the specimens thus ob-

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tained measured 5 to 10 mm in diameter and 2 to 4 mm thick. The property of the crystals to cleave along the basal plane made it possible to obtain nearly perfect surfaces not requiring mechanical polishing. Bitter patterns were observed with the "Zeiss-Neophot" microscope by using the Bitter colloid technique. It was found that the characteristic Bitter-pattern change in an external magnetic field is the same for all four domain-structure types mentioned in the previous work. In general, boundary displacement was smaller where the distances between neighboring Bloch walls was smaller; small undulations in the walls vanished as field strength was increased. It is shown that the "apparent saturation" on the lateral plane is attained at much lower field values than for the basal plane. It is concluded that all four types of domain structure observed are of the Kittel-Goodenough type, that is, the basic domain structure consists of 180° domains magnetized in the two easy directions without closure domains at the hexagonal planes. The shape of the domain walls, generally undulating, may be more or less regular; for large crystals, reverse spike domains can also occur in the demagnetized state. By planimetry of the areas of opposite polarity, it is possible to estimate the magnetization value of the samples for various applied field values. Such a method is suitable for the investigation of the relationship between the domain and the degree of magnetization of the crystals. Addi-

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tional information concerning the magnetization process can be obtained by extending the investigation to higher fields, especially near saturation. In this way it would be possible to observe more important changes of both the shape and size of domains owing to irreversible processes which also occur at lower field values but are less visible. Orig. art. has: 7 figures and 1 table.

ASSOCIATION: Institute of Physics of the Academy of the R.P.R., Bucharest

SUBMITTED: 15Apr64

ATD PRESS: 3102

ENCL: 01

SUB CODE: SS, EM

NO REF SOV: 001

OTHER: 011

Cord 3/4